FACT SHEET

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SECOND CROP RICE PRODUCTION

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Texas rice farmers are increasing production efficiency with a new method that can relieve the cost-price squeeze dilemma caused by high-production costs and low prices.

They are planting over 90 percent of their acreage to very early and early-maturing varieties adapted to second crop production, a standard practice over widespread areas of the Texas Rice Belt. This successful and economical production method can be attributed directly to cultural practices and varieties developed by the Texas A&M University Agricultural Research and Extension Center at Beaumont.

Beginning in the middle 1950's, second crop research on later-maturing varieties, including effective procedures for utilizing nitrogenous fertilizers and other cultural practices, resulted in subsequent release of the very early-maturing Belle Patna and later Bluebelle. Second crop rice, as such, was not new, but the 100-day varieties and refinement of cultural practices made it reliable.

Bluebelle and Belle Patna are particularly adapted to double cropping when planted before May 1. Many farmers consistently produce 10 or more barrels per acre of high-quality second crop rice (1 barrel weighs 162 pounds). Production of 15 to 16 barrels of second crop rice per acre has been obtained, but this is the exception rather than the rule.

Climatic Restrictions

Length of the growing season is the major limiting factor in successful production of second crop rice in Texas. The most effective rice growing period in the Texas Coast Prairie is April 15 through October 15, approximately 180 days. Growth-limiting temperatures of 50 degrees or lower seldom occur during this period. Slightly higher temperatures during early April and late October normally permit earlier planting and later maturity and harvesting in the southwestern Texas Rice Belt, as compared to the northeastern production area near Beaumont.

Very early-maturing varieties such as Bluebelle and Belle Patna usually produce reliable second crop yields if recommended procedures are followed carefully. Belle Patna has outyielded Bluebelle in second crop tests at Beaumont. Early-maturing varieties such as Nato do not produce a successful second crop unless an effective growing period extends longer than 180 days. Midseason and late maturity rice varieties offer no reasonable chances for a consistent crop, even though Bluebonnet 50, a midseason-maturing variety, occasionally has produced satisfactory second crop yields.

Length of time from seeding to maturity of the first crop is related to seeding date. Because of low temperatures in early spring and photoperiod response, rice requires more time to reach maturity when sown early. In general, 1 day in harvest date is gained for each 2 days seeded before April 15. Estimated days from seeding to maturity for three commercial varieties seeded about April 15 are:

Variety	Days from seeding to maturity
Belle Patna	102 (July 26)
Bluebelle	107 (July 31)
Nato	120 (August 13)

To assure a second crop, the first crop should be harvested before August 10, in the case of Nato, and no later than August 15 for Belle Patna and Bluebelle. If Bluebelle or Belle Patna are seeded on April 30, the first crop should mature between August 10 and 15 and the second crop between October 17 and 25. When Nato is seeded on April 9, the first crop should mature about August 10

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and the second crop between October 29 and November 7. A variety harvested by August 10 will require two-thirds to three-fourths of the original time for second crop maturity. This means 68 to 78 days for Belle Patna and Bluebelle, and 80 to 90 days for Nato. Extended cool temperatures will increase time required for second crop maturation.

Fertilization

Sixty pounds of nitrogen or approximately three-fourths of the recommended nitrogen rate for the first crop should be applied immediately after first harvest. Nitrogen applied 10 days before first harvest to stimulate earlier tillering is considered ineffective. Nitrogen applications can retard maturity of the second crop when the first crop is harvested after August 10. Such delay in harvesting the first crop, combined with any further delays caused by low temperatures, may limit successful second crop production.

Additional phosphorus (P_2O_5) has not given an economic increase in second crop yield, provided the first crop received at least 40 pounds per acre. Yields have not increased when potassium (K_2O) was applied to the second crop. A second crop can be produced by adding water alone; however, a significant yield increase can be obtained by following fertilizer recommendations.

First Crop Clipping Height

Research indicates the normal combine cutting height of 17 to 18-inch stubble is satisfactory for all varieties. At this height, maturity may be uneven. However, the crop will be ready for harvest sooner than from lower clipping heights. Effective regrowth occurs from dormant buds at ground level. Clipping stubble to 10 inches or shorter may delay second crop maturity 1 to 3 weeks.

Some farmers have practiced rolling or flattening stubble immediately after first harvest, with results similar to short clipping. Maturity may be more uniform but considerably delayed. Do not follow this practice unless first harvest is before August 1, and only with very early-maturing varieties. Delay caused by mowing or rolling old stubble may drastically reduce yields because of low temperatures encountered before second crop maturity.

First harvest straw should be baled or spread uniformly with a combine straw spreader to eliminate harmful shading effects on regrowth.

Application of growth regulators or hormones to stubble to obtain earlier and more rapid tillering is not recommended.

Water Management

Water management for the second crop is extremely important. During first harvest, the field should be dry enough to support heavy machinery. Flushing or light flooding is recommended for fertilizer placement immediately after nitrogen is applied to stubble. Keep soil moist but not flooded for about 2 weeks after first harvest until new tillers from the base or crown are 4 to 6 inches high. Then apply and maintain a light flood until the field is drained for harvest. If air temperatures below 55 degrees F. are anticipated before last draining, increase water depth to reduce low temperature damage.

Second Crop Returns

Research and farmer experience have shown that second crop yields of a third to half of the first crop may be obtained, if nitrogen and water are applied to stubble and the first crop is harvested by August 10. Rutting of fields during first harvest can limit or prohibit an economical second crop.

Second crop rice production should continue to be a regular and important practice for Texas rice farmers. The very early-maturing Bluebelle and Belle Patna varieties have considerably reduced low temperature hazards by permitting later first crop seeding and earlier second crop maturity.

The producer should decide if a second crop yield of 6 to 14 barrels will provide economical returns after considering additional costs of fertilizer, water, rent, harvesting and storage. He should realize that second crop returns can be reduced because of first crop lodging.

Rice farmers in the cattle business may lessen the risk of second crop production by grazing or baling extra forage produced by the addition of water and nitrogen to rice stubble if weather or other factors prevent harvesting.

Economics of Second Crop Rice (9 bbl. yield)

Added costs:	Estimated
Fertilizer—60 lb. N @ 15¢ applied	$ 9.00
Water—2 floodings @ $1.50	3.00
Application labor 1.5 hr. @ $2.00	3.00
Interest—$15.00 (fertilizer and water) @ 7% for 3 months	.26
Harvesting and hauling @ 90¢ bbl.	8.10
Drying—9 bbl. @ 50¢	4.50
Total added cost	$27.86
Added return:	
Rice—9 bbl. @ 7.90	71.10
Added net return	$43.24

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